

Pediatric Learning Solutions

The following Pediatric Learning Solutions courses align to focus areas of the Pediatric CRRN® Exam Content Outline. These courses equip candidates with the foundational knowledge necessary to approach the Pediatric CRRN® exam with confidence. Go to the [Association of Critical-Care Nurses](#) site for more information on the CCRN Exam.

Pediatric Learning Solutions' course alignment with Pediatric CRRN® Exam Content Outline.
(Note: PLS Courses are in *italics* under topic area)

I. **Clinical Judgment**

A. **Cardiovascular**

1. Acute Pulmonary Edema

PLS Courses:

Acute Respiratory Distress Syndrome

Congestive Heart Failure

Introduction to Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO

2. Cardiac Surgery

PLS Courses:

Congenital Heart Disease: Overview

Congenital Heart Disease: Acyanotic Defects

Congenital Heart Disease: Cyanotic Defects

Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO

General Post-Op Care of the Transplant Patient

Nursing Management of Chest Tubes

3. Cardiac/Vascular Catheterization

PLS Course:

Cardiovascular Laboratory Procedures: Diagnostic and Interventional

4. Cardiogenic Shock

PLS Course:

Caring for the Pediatric Patient in Shock

Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO



5. Cardiomyopathies

PLS Courses:

Acquired Heart Disease

Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO

General Post-Op Care of the Transplant Patient

6. Dysrhythmias

PLS Courses:

Structure and Function of the Heart

Electrophysiology

The Cardiac Monitor

Lines, Waves and Segments

Analyzing the ECG Rhythm Strip

Sinus Rhythms

Atrial Arrhythmias

Junctional Arrhythmias

Ventricular Arrhythmias

Atrioventricular Arrhythmias

Channelopathies

Temporary Pacemakers

Permanent Pacemakers and ICDs

7. Heart Failure

PLS Courses:

Congestive Heart Failure

Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO

8. Hypertensive Crises

PLS Courses:

Pulmonary Arterial Hypertension

Introduction to Hemodynamic Monitoring

Vasoactive Medications

9. Myocardial Conduction System Defects

PLS Courses:

Acquired Heart Disease

Arrhythmia Recognition Series

- *Atrial Arrhythmias*
- *Junctional Arrhythmias*
- *Ventricular Arrhythmias*
- *Atrioventricular Arrhythmias*

- *Channelopathies*

10. Structural Heart Defects

PLS Courses:

Acquired Heart Disease

Congenital Heart Disease: Overview

Congenital Heart Disease: Acyanotic Defects

Congenital Heart Disease: Cyanotic Defects

Introduction to Hemodynamic Monitoring

Vasoactive Medications

Introduction to ECMO

General Post-Op Care of the Transplant Patient

B. Pulmonary

1. Acute Pulmonary Embolus

2. Acute Respiratory Distress Syndrome

PLS Courses:

Acute Respiratory Distress Syndrome

Introduction to Arterial Blood Interpretation

Understanding Abnormal Blood Gases

Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation

Management of the Difficult Airway

Advanced Concepts in Respiratory Physiology

Mechanical Ventilation: Introduction to Pediatric Practices

High-Frequency Ventilation

Preventing Ventilator-Associated Infections

Caring for a Child with a Tracheostomy

3. Acute Respiratory Failure

PLS Courses:

Acute Respiratory Distress Syndrome

Introduction to Arterial Blood Interpretation

Understanding Abnormal Blood Gases

Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation

Management of the Difficult Airway

Advanced Concepts in Respiratory Physiology

Mechanical Ventilation: Introduction to Pediatric Practices

High-Frequency Ventilation

Preventing Ventilator-Associated Infections

Introduction to ECMO

Caring for a Child with a Tracheostomy

4. Acute Respiratory Infection (e.g., pneumonia)
PLS Courses:
Acute Respiratory Distress Syndrome
Lower Airway Diseases
5. Air-leak Syndromes
PLS Courses:
Neonatal Respiratory Distress Syndrome
Pneumothorax in the Neonate
6. Aspiration
7. Bronchopulmonary Dysplasia
PLS Course:
Bronchopulmonary Dysplasia
8. Congenital Anomalies
PLS Courses:
Congenital Diaphragmatic Hernia
Esophageal Atresia and TE Fistula
Gastroschisis and Omphalocele
9. Chronic Conditions (e.g., asthma, bronchitis)
PLS Courses:
Lower Airway Disease
Basic Principles of Oxygen Therapy, Specialty Gases and Noninvasive Ventilation
10. Failure to Wean from Mechanical Ventilation
PLS Courses:
Advanced Concepts in Respiratory Physiology
Mechanical Ventilation: Introduction to Pediatric Practices
Caring for a Child with a Tracheostomy
11. Pulmonary Hypertension
PLS Courses:
Pulmonary Arterial Hypertension
Persistent Pulmonary Hypertension of the Newborn
12. Status Asthmaticus
PLS Course:
Lower Airway Disease
Status Asthmaticus (New – to be released in late 2017)
13. Thoracic Surgery
PLS Courses:

Congenital Heart Disease: Acyanotic Defects
Congenital Heart Disease: Cyanotic Defects
General Post-Op Care of the Transplant Patient
Nursing Management of Chest Tubes

14. Thoracic Trauma

PLS Course:
Pediatric Thoracic Trauma

C. Endocrine/Hematology/Gastrointestinal/Renal/Integumentary

1. Endocrine

a. Acute Hypoglycemia, Hyperglycemia

PLS Courses:
Diabetes Mellitus
Diabetes Insipidus and SIADH

b. Diabetes Insipidus

PLS Course:
Diabetes Insipidus and SIADH

c. Diabetic Ketoacidosis

PLS Course:
Diabetic Ketoacidosis

d. Hyperglycemia

PLS Courses:
Diabetes Mellitus
Diabetes Insipidus and SIADH

e. Inborn Errors of Metabolism

PLS Course:
Newborn Metabolic Disorders

f. SIADH

PLS Course:
Diabetes Insipidus and SIADH

2. Hematology/Immunology

a. Anemia

PLS Course:
Anemia and Polycythemia in the Newborn (New – to be released in late 2017)

b. Coagulopathies (e.g., ITP, DIC, HIT)

PLS Course:

Disseminated Intravascular Coagulation

- c. Immune Deficiencies
PLS Course:
Diabetes Mellitus
 - d. Leukopenia
 - e. Oncologic Complications
PLS Course:
Oncologic Emergencies
 - f. Sickle Cell Crisis
PLS Course:
Sickle Cell Crisis
 - g. Thrombocytopenia
PLS Courses:
Disseminated Intravascular Coagulation
Blood Administration: Exchange Transfusion
Thrombocytopenia: ITP and HIT/T (New – to be released in late 2017)
3. Gastrointestinal
- a. Acute Abdominal Trauma
PLS Course:
Pediatric Abdominal Trauma
 - b. Acute GI Hemorrhage
PLS Course:
Pediatric Abdominal Trauma
 - c. Bowel Infarction/Obstruction/Perforation
 - d. Gastroesophageal reflux
PLS Course:
Nutrition in the Critically Ill Child
 - e. GI Abnormalities (e.g., omphalocele; gastroschisis, volvulus, imperforate anus, Hirschsprung disease, malrotation, intusseption)
PLS Courses:
Gastroschisis and Omphalocele
Congenital Diaphragmatic Hernia
 - f. GI Surgeries
PLS Courses:
Gastroschisis and Omphalocele

Congenital Diaphragmatic Hernia
General Post-Op Care of the Transplant Patient

- g. Hepatic Failure/Coma (e.g., biliary atresia, etc.)

PLS Courses:

Liver Transplant

General Post-Op Care of the Transplant Patient

- h. Malnutrition and Malabsorption

PLS Courses:

Nutrition in the Critically Ill Child

Neonatal Nutrition

Pediatric Nutrition Overview

4. Renal/Genitourinary

- a. Acute Kidney Injury, Failure, Acute Tubular Necrosis

PLS Courses:

Renal Failure in the Pediatric Patient

Hemodialysis

Continuous Renal Replacement Therapy

General Post-Op Care of the Transplant Patient

- b. Chronic Kidney Disease

PLS Courses:

Hemodialysis

Peritoneal Dialysis

General Post-Op Care of the Transplant Patient

- c. Renal/GI Infections

PLS Courses:

Pediatric Assessment: The Gastrointestinal System

Pediatric Assessment: The Genitourinary System

- d. Life-threatening Electrolyte Imbalances

PLS Courses:

Fluids and Electrolytes Imbalance: Dehydration

Fluids and Electrolytes: Laboratory Assessment

Fluids and Electrolytes: Physical Assessment

Fluids and Electrolytes: Physiological Differences

Fluids and Electrolytes: Replacement Therapy

Fluids and Electrolytes: Water Intoxication and Fluid Shift

5. Integumentary

- a. IV Infiltration

PLS Courses:
Pediatric Peripheral IV Care & Management
Management of PIV Complications in the Pediatric Patient

b. Pressure Ulcer

PLS Courses:
Introduction to Pediatric Pressure Injuries
Pressure Injuries in the Pediatric Population: Staging and Care
Pressure Injury Staging Assessment

c. Wounds (infectious, surgical, trauma)

PLS Courses:
Preventing Surgical Site Infections
Pediatric Burns

D. Musculoskeletal/Neurology/Psychosocial

1. Musculoskeletal Infections

2. Neurology

a. Acute Spinal Cord Injury

PLS Courses:
Pediatric Spinal Column/Cord Injuries

b. Brain Death

PLS Courses:
Pediatric Traumatic Brain Injury
Organ and Tissue Donation: The Gift of Life

c. Congenital Neurologic Abnormalities (e.g., AV malformation, myelomeningocele, encephalocele)

PLS Course:
Neonatal Cranial Hemorrhage

d. Encephalopathy

PLS Courses:
Meningitis and Encephalitis
Intracranial Pressure Monitoring

e. Head Trauma

PLS Courses:
Pediatric Traumatic Brain Injury
Intracranial Pressure Monitoring
Craniotomy

- f. Hemorrhage (intracranial, intraventricular, subarachnoid)
PLS Courses:
Intracranial Pressure Monitoring
Craniotomy
Neonatal Cranial Hemorrhage
 - g. Hydrocephalus
PLS Course:
Hydrocephalus
 - h. Ischemic Stroke
PLS Course:
Intracranial Pressure Monitoring
 - i. Neurologic Infectious Disease (e.g., viral, bacterial, fungal)
PLS Course:
Meningitis and Encephalitis
 - j. Neuromuscular Disorders
 - k. Neurosurgery
PLS Courses:
Craniotomy
Pediatric Traumatic Brain Injury
 - l. Seizure Disorders
PLS Courses:
Status Epilepticus
Neonatal Seizures
 - m. Space-occupying Lesions (e.g., brain tumors)
PLS Courses:
Craniotomy
Intracranial Pressure Monitoring
 - n. Spinal Fusion
 - o. Traumatic Brain Injury (e.g. epidural, subdural, concussion, non-accidental trauma)
PLS Courses:
Pediatric Traumatic Brain Injury
Intracranial Pressure Monitoring
Craniotomy
3. Behavioral/Psychosocial
- a. Abuse, Maltreatment, Neglect
PLS Course:
Child Abuse and Neglect

- b. Agitation
 PLS Courses:
 Caring for the Behaviorally Challenged Patient
 Pediatric Restraint and Seclusion
- c. Developmental Delays
 PLS Courses:
 Caring for the Behaviorally Challenged Patient
 Pediatric Restraint and Seclusion
- d. Failure to Thrive
 PLS Courses:
 Nutrition in the Critically Ill Child
 Neonatal Nutrition
 Pediatric Nutritional Overview
- e. Medical Non-adherence
- f. Suicidal ideation and/or Behaviors
 PLS Courses:
Care of the Suicidal Patient in the ED (New – to be released in late 2017)
Caring for the Behaviorally Challenged Patient

E. Multisystem

- 1. Asphyxia
 PLS Courses:
Acute Respiratory Distress Syndrome
HIE (New – to be released in late 2017)
- 2. Comorbidity in Patients with Transplant History
 PLS Courses:
Liver Transplant
General Post-Op Care of the Transplant Patient
- 3. End of Life
 PLS Courses:
Care of the Dying Child: Care Issues
Care of the Dying Child: Grief
Care of the Dying Child: The Dying Process
Health Care Advance Directives: Communicating Wishes
Organ and Tissue Donation: The Gift of Life
- 4. Healthcare-associated Infections (CLABSI, CAUTI, VAP)

PLS Courses:

Preventing Catheter-Associated Urinary Tract Infection (CAUTI)

Preventing Central Line-Associated Bloodstream Infections (CLABSI)

Preventing Surgical Site Infections

Preventing Ventilator-Associated Infections

5. Hemolytic Uremic Syndrome

PLS Courses:

Renal Failure in the Pediatric Patient

6. Hypotension

7. Infectious Diseases (MDROs; influenza)

PLS Courses:

Management of MDROs in the Health Care Setting (Clinical)

Tuberculosis

8. Multi-organ Dysfunction Syndrome

PLS Course:

Deadly Triad of Trauma

9. Multisystem Trauma

PLS Course:

Deadly Triad of Trauma

10. Pain

PLS Courses:

Pain Management: Assessment of Pain

Pain Management: Non-Pharmacological Therapies in the Management of Pediatric Pain

Pain Management: Pain Pathophysiology

Pain Management: Pharmacological Management of Pediatric Pain

Pain Technologies: PCA & Epidural Analgesia

Sedation and Analgesia in the ICU

Procedural Sedation in the Pediatric Patient

11. Palliative Care

PLS Courses:

Care of the Dying Child: Care Issues

Care of the Dying Child: Grief

Care of the Dying Child: The Dying Process

12. Sepsis Continuum (SIRS, sepsis, severe sepsis, septic shock)

PLS Courses:

Pediatric Sepsis

Neonatal Sepsis
Care of the Pediatric Patient in Shock
Blood Administration: Exchange Transfusion

13. Shock States (distributive, hypovolemic)
PLS Course:
Care of the Pediatric Patient in Shock
14. Sleep Disruption (including sensory overload)
15. Submersion Injuries
16. Thermoregulation
PLS Course:
Thermoregulation
17. Toxic Ingestions/Inhalations
PLS Course:
Pediatric Toxicology Exposure
18. Toxin/drug Exposure (including allergies)
PLS Courses:
Pediatric Toxicology Exposure
Blood Administration: Exchange Transfusion

II. Professional Caring and Ethical Practice

1. Advocacy/Moral Agency
PLS Courses:
Introduction to Ethics
Family-Centered Care in the ICU
Therapeutic Relationships and Professional Behavior (New – to be released in late 2017)
2. Caring Practices
PLS Courses:
Introduction to Ethics
Family-Centered Care in the ICU
3. Response to Diversity
PLS Course:
Introduction to Workplace Diversity
4. Facilitation of Learning
PLS Courses:
Precepting: Adult Learners
Precepting: Preceptor Roles and Responsibilities

5. Collaboration
 - PLS Courses:*
 - Building Effective Teams*
 - Clinical Delegation*
 - Coaching*
 - Empowering Teams*
 - Giving and Receiving Feedback*
 - Therapeutic Relationships and Professional Behavior (New – to be released in late 2017)*

6. Systems Thinking
 - PLS Courses:*
 - Building Effective Teams*
 - Empowering Teams*
 - Introduction to Finance*

7. Clinical Inquiry
 - PLS Course:*
 - Introduction to Research Ethics*

Other related and supporting PLS content:

Patient Care

- Assessment of the Critically Ill Child*
- Blood Administration: Administration of Blood and Blood Components*
- Blood Administration: Blood Components*
- Blood Administration: Transfusion Reaction*
- Caring for the Complex Patient (New – to be released in late 2017)*